

REMARKS

Claims 1, 4, 5, 7-10, 25, and 26 are pending in this application. Claims 1 and 25 are amended while claim 26 is new.

102 Rejections

Claim 25 is rejected under 35 USC 102(b) as being anticipated by Miesel (US Pat 6,248,080). Applicants respectfully traverse this rejection.

Response:

Claim 25 recites “a plurality of leads, a plurality of tissue-interactive elements associated with the plurality of leads, and a satellite control module coupled between the plurality of leads and the distal end portion of the elongated conductor....” Claim 25 further recites “the satellite control module comprising a housing such that at least a portion of the plurality of leads and the plurality of tissue-interactive elements are external of the housing of the satellite control module....” Applicants assert that Miesel fails to disclose at least these recitations.

Miesel discloses an IPG 100 and a sensor module 20. A lead 12, presumably being equated to the elongated conductor of claim 25, connects the IPG 100 to the sensor module 20. However, Miesel fails to disclose leads and associated tissue interface elements being present externally of the housing of the sensor module 20. The sensing of temperature and pressure is being done by elements within the sensor module 20. The elements for temperature and pressure sensing are the only tissue interface elements. Furthermore, to the extent there are any leads associated with the elements for temperature and pressure sensing, such leads would also be inside the sensor module 20.

Therefore, Miesel fails to disclose that at least a portion of the plurality of leads associated with the tissue interface elements are external of the housing of the satellite control module, and claim 25 is allowable over Miesel for at least this reason. Furthermore, Miesel fails to disclose that the tissue interface elements are external of the housing of the satellite control module, and claim 25 is allowable over Miesel for at least this additional reason.

Should the Examiner maintain a rejection of claim 25 based on Miesel, in addition to addressing Applicants' arguments above, Applicants respectfully request that the Examiner also clearly and precisely identify which item of Miesel is the elongated conductor as recited in claim 25 and which items are the plurality of leads as recited in claim 25. Presently, the Office Action refers to item 12 as a conductor and then again refers to item 12 as a lead with tissue interface elements. Should the examiner be stating that item 12 of Miesel is both the elongated conductor and the plurality of leads as claimed, Applicants request a clear and precise explanation of how conductor 12 provides both the elongated conductor as claimed and the plurality of leads as claimed. Applicants contend that conductor 12 does not provide both the elongated conductor and the plurality of leads as recited in claim 25.

As Miesel fails to account for all of the recitations of claim 25, claim 25 is allowable over Miesel for at least these several reasons.

102/103 Rejections

Stypulkowski

Claims 1, 8-10 and 25 are rejected under 35 USC 102(e) as being anticipated by U.S. Pat 7,286,878 to Stypulkowski, or in the alternative, under 35 USC 103(a) as being obvious over Stypulkowski. Claims 4, 5, and 7 are rejected under 35 USC 103(a) as being obvious over Stypulkowski. Applicants respectfully traverse these rejections.

Claim 1

Claim 1 recites "a first lead coupled to the central control module that comprises at least one connector, the first lead carrying power from the power source and digital communications including the programming signals from the wireless receiver." Claim 1 further recites "a satellite module ... comprising a processor coupled to said wireless receiver by the first lead and the processor configured to be coupled to the power source by the first lead, a communication module coupled to said processor for communicating with said central control module by the first lead...." Claim 1 additionally recites "wherein said processor is configured to receive said programming signals from said wireless receiver over the first lead...."

Applicants assert that Stypulkowski fails to disclose at least these recitations. Stypulkowski is concerned with providing stimulation pulses from an IPG to an extension unit and shaping the pulses at the extension unit for delivery to an array of electrodes. Stypulkowski relies on a battery of the extension unit 326 to power the controller, switches and so forth as shown by the connections to the battery in FIG. 3, as opposed to transferring power from the IPG to the extension unit over a lead. Furthermore, Stypulkowski does not disclose digital communications over a lead that also includes power that is being transferred.

In Stypulkowski, the connections from the IPG to the extension unit are shown as input lines 302, 303, and 304. These input lines are said to carry the input pulses that are received by the wave shapers and that are altered to produce the stimulation waveforms. These input lines are also said to carry pulses that the controller receives as programming to control the wave shapers or the switches. In the case of the pulses as programming, these are not power signals to the controller but are merely programming signals as the controller apparently relies upon the battery 326 to power its operation as there is no discussion of providing power to the controller from the input lines 302, 303, or 304. So at best, the input lines 302, 303, or 304 carry programming pulses and stimulation pulses but do not carry power for the controller.

Therefore, Stypulkowski fails to disclose the first lead carrying power from the power source. Stypulkowski also fails to disclose the processor configured to be coupled to the power source by the first lead. Claim 1 is allowable over Stypulkowski for at least these reasons. Dependent claims 4, 5, and 7-10 depend from an allowable base claim and are also allowable for at least the same reasons.

Claim 25

Claim 25 recites “the elongated conductor carrying power from the power source and digital communications including the programming signals from the wireless receiver..., the satellite control module being configured to generate and selectively route electrical signals through the plurality of leads to selected ones of the plurality of tissue-interactive elements in accordance with the programming signals received from the remote programmer through the elongated conductor.”

Applicants assert that Stypulkowski fails to disclose at least these recitations. As stated above, Stypulkowski is concerned with providing stimulation pulses from an IPG to an extension unit and shaping the pulses at the extension unit for delivery to an array of electrodes. Stypulkowski relies on a battery of the extension unit 326 to power the controller, switches and so forth as shown by the connections to the battery in FIG. 3, as opposed to transferring power from the IPG to the extension unit over an elongated conductor. Furthermore, Stypulkowski does not disclose digital communications over an elongated conductor that also includes power that is being transferred.

In Stypulkowski, the connections from the IPG to the extension unit are shown as input lines 302, 303, and 304. These input lines are said to carry the input pulses that are received by the wave shapers and that are altered to produce the stimulation waveforms. These input lines are also said to carry pulses that the controller receives as programming to control the wave shapers or the switches. In the case of the pulses as programming, these are not power signals to the controller but are merely programming signals as the controller apparently relies upon the battery 326 to power its operation as there is no discussion of providing power to the controller from the input lines 302, 303, or 304. So at best, the input lines 302, 303, or 304 carry programming pulses and stimulation pulses but do not carry power for the controller.

Therefore, Stypulkowski fails to disclose the elongated conductor carrying power from the power source. Stypulkowski also fails to disclose the satellite control module being configured to generate electrical signals produced from power received over the elongated conductor. Claim 25 and dependent claim 26 are allowable over Stypulkowski for at least these reasons.

Furthermore, claim 26 recites wherein the electrical signals are produced within the satellite control module from the power received through the elongated conductor. Applicants assert that Stypulkowski also fails to disclose these recitations such that claim 26 is allowable for at least these additional reasons. In Stypulkowski, the wave shapers of the extension unit receive via the input lines 302, 303, and 304 stimulation pulses that have been created within the IPG. These stimulation pulses are shaped to provide signals to the electrodes. The stimulation pulses themselves are generated within the IPG rather than the extension unit and

are therefore produced by power within the IPG rather than being produced at the extension unit from power received over an elongated conductor. Thus, claim 26 is allowable over Stypulkowski for at least these additional reasons.

Conclusion

In view of the foregoing amendments, Applicants respectfully request reconsideration and allowance of the claims as all rejections have been overcome. Early notice of allowability is kindly requested.

The Examiner is respectfully requested to contact the undersigned by telephone at 770.643.8913 with any questions or comments.

While no fees are believed due beyond those already paid, please grant any extension of time, if necessary for entry of this paper, and charge any fee due for such extension or any other fee required in connection with this paper to Deposit Account No. 13-2546.

Respectfully submitted,

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